

On Reichenbach's Context Distinction

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How a debate is framed strongly influences the outcome. One powerful framing of the relationship between the history and the philosophy of science has been to distinguish the historical contingencies of how a scientific theory was developed (“the context of discovery”) from whether the theory is justified by the evidence (“the context of justification”). As Jutta Schickore and Friedrich Steinle wrote in a recent anthology, “For several decades, the context distinction dictated what philosophy of science should be and how it should proceed” (2006, p. vii). Philosophy of science, the assumption goes, should deal exclusively with the context of justification. For example, historians can ask what life experiences led Einstein to relativity, but philosophers should investigate whether the theory of relativity is justified, and should do so by examining only the theory itself. In 1938, Hans Reichenbach coined the phrases “context of discovery” and “the context of justification.” In this paper I compare his definition of the distinction with recent attempts to define it. I discover that the meaning has changed substantially in the last 70 years. In particular, there is more room in Reichenbach’s context of justification for an historical analysis of science than some current uses of the context distinction suggest.

Paul Hoyningen-Huene (1987, 2006) offers an impressive cataloging of the many disagreements about the context distinction. Prominent criticisms of the distinction include: that, like justification, discovery follows a logic (Hanson 1971); that justification involves more than logical analysis (Kuhn 1962, Feyerabend 1975); and, specifically, that biographical information such as values might be relevant to justification. Hoyningen-Huene suggests, however, that at the core, most scholars will recognize the distinction between descriptive and normative accounts of scientific theories.

If Hoyningen-Huene is right that most scholars will accept his “Lean” context distinction as the core of the context distinction, and given that Reichenbach’s work is an influential original formulation of the context distinction, then we should expect to find Reichenbach’s own contexts of discovery and justification aligned in the same way. But we do not. Reichenbach distinguishes between the actual thinking processes of scientists and their “cleaned-up” arguments for public presentation. Reichenbach dubs the study of the actual thinking processes the “psychologist’s task,” whereas reconstructing the arguments is the epistemologist’s “descriptive task,” and evaluating those arguments is the epistemologist’s “critical task.” If Hoyningen-Huene were right, then we should expect to find Reichenbach distinguishing between the psychologist’s task in the context of discovery on one hand, and the descriptive and the critical tasks in the context of justification, on the other.

Instead, I argue, we find Reichenbach’s context distinction drawn between the psychologist’s task and the descriptive task, with the critical task left out of the contexts all together. Thus, Reichenbach’s context of justification is not, in fact, where the philosopher’s critical normative analysis of scientific arguments takes place. Reichenbach’s context distinction does not embody a distinction between descriptive and normative accounts of science. Rather, Reichenbach argues for a more nuanced relationship between actual episodes of science and their philosophical analysis. His aim is to defend his own account of science by claiming that the best scientists follow his process of justification, even if they do not do so consciously. In particular, he suggests that philosophers create reconstructions of scientific arguments and that such reconstructions must adhere to actual thinking processes, thus maintaining a strong role for history within philosophy of science.

This does not necessarily mean that we should reject Hoyningen-Huene's Lean contexts, which might prove to be a useful heuristic device. Nor am I suggesting we should return to Reichenbach's original meaning. However, this does suggest that the distinction between normative and descriptive has not been lurking in the original context distinction all along, but rather has been read into it more recently.

How should philosophy of science be informed by history of science and psychology of science?

Although recent suggestions reaffirm the traditional view that a clear distinction can be made between philosophical normative questions on the one hand, and historical descriptive questions on the other, I argue that Reichenbach did not in fact support such a clear distinction. Beyond the interpretive issue, this discovery about the shifted meaning should serve as a call for caution. As we renew the debate on the context distinction and cast around for common ground and common definitions from which to frame the relationship between history of science and philosophy of science, we should recognize that even a proposal as seemingly lean as the Lean distinction between descriptive and normative perspectives on science can be contentious and far from universally maintained.

References:

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